R38/30 & R38/45
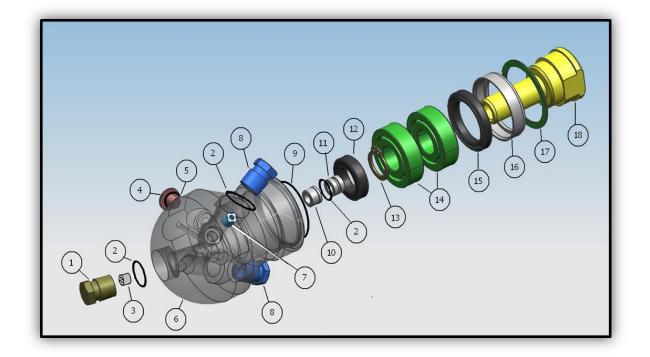
This Document includes an operation manual and service guidelines for the 3/8" spinning Rootax nozzle.

Item	Description	Qty	Part Number
1	Front Jet	1	Refer jet listing below
2	O-Ring	3	01R-SPJOR
3	Flow Straightener	4	01R-SPFS
4	Oil Chamber Screw	1	01R-SPFCS
5	O-ring	1	01R-SPSOR
6	Nozzle body	1	01R-SPNB
7	Water Gallery Grub Screw	1	01R-SPGS
8	Rear Jet	2	Refer jet listing below
9	Rear O-ring	1	01R-SPROR
10	Bronze Seal	1	01R-SPBS
11	Piston (Nylon)	1	0-SPNPR
12	Front Oil Seal	1	01R-SPFOS
13	Circlip	1	01R-SPCC
14	Bearing	2	0-SPBBR
15	Rear Oil Seal	1	01R-SPROS
16	Seal Retaining Ring	1	01R-SPRR
17	Rear Retaining Clip	1	01R-SPRC
18	Input Shaft	1	01R-SPIS

LPM	Front Jet	Rear Jets
20-22	0.024	0.039
23-25	0.026	0.039
25-28	0.026	0.042
28-35	0.038	0.042
35-40	0.042	0.042

Rootax Nozzle Description:

The 3/8" Rootax 38/30 and the 38/45 are controlled rotation rotary nozzles designed for use in pipes from 90mm to 150mm in diameter. The two powerful rear jets of the Rootax thrust the nozzle up the pipe while cutting and flushing debris clear, while the front jet cuts forward eliminating the need to use a penetrating nozzle to break through blockages. The Rootax nozzle utilises a dense viscous fluid to slow the head speed down dramatically increasing cleaning and cutting ability. The Rootax nozzle's typical working speed at 4000PSI with up to 45lpm is between 200-600 rpm

Operation:

Before connecting the Rootax nozzle to the end of the sewer cleaning hose, flush the hose through and clean the thread to prevent debris entering the nozzle. Rotate the nozzle input shaft by hand and ensure there is an appropriate amount of resistance and the viscous fluid has not escaped from the nozzle. Thread sealing tape should be used to seal the thread. Position the Rootax nozzle into the pipe which is to be cleaned ensuring it is at least 1m in from the point of entry. (**NOTE:** In pipes larger than 150mm in diameter a straight section of H/P pipe should be screwed into the nozzle to prevent the nozzle from turning back on itself.) When the nozzle is in position and all safety precautions have been taken, open the delivery valve and bring machine up to pressure. When operating pressure is reached, feed the Rootax nozzle into the pipe. Optimum feed rate to ensure full flushing of the pipe wall is 1m per 3 seconds. If tree roots or other blockages are present, bring the nozzle back 20- 50 mm from the obstruction to allow the front jet to cut its way through and feed the nozzle at a slower rate. If the Rootax is fed into the roots without restraint the cutter can slow down or stop, resulting in reduced cutting and cleaning performance. If the Rootax nozzle is to be stored for more than two weeks it is recommended to use compressed air to blow any water and residue out of the nozzle before storage. The Rootax nozzle should always be full of viscous fluid. If the nozzle has insufficient fluid it will rotate much faster than designed resulting in excessive component wear internally and externally or total nozzle failure. If at any time the nozzle seems to be rotating faster than normal check the fluid.

Troubleshooting:

Head will not Rotate: Rotate the nozzle by hand and see if the bearings feel gritty or rough to turn. Is so the nozzle will need to be disassembled and repaired as it is likely that the nozzle has worn bearings and/or seals which will require replacing/cleaning. If the nozzle rotates freely with the normal amount of resistance, inspect the nozzle tips for blockages. If a nozzle blockage is present remove and clear the nozzle tip. Do not push the material back into the nozzle body as it will only re-lodge/re- block the nozzle tip. Even a partially blocked nozzle tip can prevent the nozzle head from rotating.

Head spins too fast: If the head is rotating faster than normal it is likely that the Rootax is low on viscous fluid or the viscous fluid is contaminated. The input shaft will need to be removed, the fluid drained and new fluid injected in. Check for wear on the input shaft and that the oil seals are not damaged.

Seal leaks: The main high pressure seal may leak at low pressure but should pop closed when the pressure is increased. If full operating pressure is reached and the seal is still leaking the high pressure seal will need to be replaced. Cont.....

Seals wear out quickly: *If the seals are wearing prematurely the Rootax will need to be disassembled and inspected. The brass high pressure seal should be checked that it is installed in the right direction and that there are no wear groves in the input shaft where the brass seal locates. If there are grooves the shaft will need to be replaced.*

Warranty And Maintenance:

Rootax Head Should Be Checked Daily For Loose Chamber Screw And Oil Leaks

The most important thing with maintaining the Rootax cutting nozzle is to keep the nozzle full of viscous fluid. The Rootax should be injected with new viscous fluid every 4th – 5th time of operation. If the Rootax is spinning much faster than when new, this is an indication that the cutter needs fluid.

To fill the Rootax 38 with Fluid.

1. *Fill the syringe with Rootax fluid.*

2. *Remove fluid chamber screw, thread syringe into Rootax nozzle and slowly inject Rootax fluid into the nozzle until the clean fluid exits from the rear shaft seal.*

3. *Remove syringe and re-install fluid chamber screw. (ensure the chamber screw has its o ring in place)*

4. *it is recommended to place a small amount of thread locker on the chamber screw before screwing it back into the nozzle.*